

# Kennedy/Jenks Consultants

Engineers and Scientists

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14 August, 1996

Mr. Mario Stavale  
McDonnell Douglas Realty Company  
4060 Lakewood Blvd., Fifth Floor  
Long Beach, CA 90808

Subject: Supplemental Subsurface Investigation  
Douglas Aircraft C-6 Facility  
Torrance, California  
KJ 954019.01

Dear Mr. Stavale:

Kennedy/Jenks Consultants is pleased to submit this report of the findings of additional subsurface investigation at the Douglas Aircraft Company C-6 Facility. The additional investigation is associated with a former hazardous waste accumulation area east of the northeast corner of Building 29.

## BACKGROUND

McDonnell Douglas Realty Company retained Kennedy/Jenks Consultants to perform a Phase II subsurface investigation of the northern section of the Douglas Aircraft Company (DAC) C-6 Facility in Torrance, California (Figure 1). The investigation was confined to the area identified by McDonnell Douglas Realty Company as Parcel A. Specific areas of the investigation were identified in an earlier preliminary site assessment as potential area of environmental interest. The findings and conclusions of Kenny/Jenks' subsurface investigation are detailed in the report entitled *Phase II Subsurface Investigation, Douglas Aircraft Company, C-6 Facility, Parcel A, Torrance, California*, submitted to DAC in May of 1996.

Based on the findings and conclusions of the Phase II Subsurface Investigation, Kennedy/Jenks submitted recommendations for further attention at several areas of environmental interest. Among them was a recommendation for additional soil sampling and analysis in the area around sample location 15, which was installed close to a drain in an area formerly used as a hazardous waste accumulation site. Samples collected from location 15 contained VOCs including 1,1-dichloroethane (1,1-DCA), 1,1-dichloroethene (1,1-DCE), tetrachloroethene (PCE), and trichloroethene (TCE).

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## SCOPE OF WORK

Kennedy/Jenks mobilized to the site on 15 July 1996. Two soil borings were drilled to depths of 40 feet below ground surface (bgs). The borings are located at the northwest and southeast corners of the hazardous waste accumulation area, and are designated 15A and 15B, respectively. Prior to drilling, a utility clearance was performed on the boring locations using a geophysical survey. Soil samples were collected at 5-foot intervals in pre-cleaned brass sample sleeves using a truck-mounted, hydraulically-driven sample barrel. Samples were handled in accordance with Kennedy/Jenks Consultants' standard operating guidelines.

Each boring was logged onsite by Kennedy/Jenks personnel following the Unified Soil Classification System. Drill cuttings and soil samples were visually evaluated for the presence of chemical staining and were monitored for volatile organic compounds (VOCs) using a portable photoionization detector (PID). Detailed logs of both borings are presented in Appendix A.

All soil samples were transported to a State-certified laboratory for analysis under proper chain-of-custody procedures. From both borings, the soil samples collected at depths of 10, 25, 30, 35, and 40 feet bgs were analyzed for VOCs using EPA Method 8010/8020. The remaining samples were placed on hold pending the results.

## FINDINGS OF THE INVESTIGATION

The subsurface conditions in both borings consist generally of fine-grained soils. Mottled dark olive brown and very dark gray brown, firm silty clay underlies the surface to a depth of about 8 to 10 feet bgs. Silty clay is underlain by olive brown, firm, very fine- to fine-grained sandy silt. Sandy silt extends to a depth of about 35 feet bgs, and is interrupted by a silty clay lens at 25 feet bgs in boring 15A. At 35 feet bgs the soil grades to olive brown, very fine- to fine-grained silty sand. Groundwater was not encountered in either boring, but the soil was very moist at a depth of 25 feet bgs in boring 15B.

The analytical results of the soil samples are summarized in Table 1. The complete laboratory report is presented in Appendix B. Figure 2 shows the detections made in the soil samples compared to the results of soil samples from location 15 of the previous investigation. VOCs were not detected in any of the soil samples from boring 15A. Four analytes were detected in samples from boring 15B, including 1,1-DCE, PCE, TCE, and trichlorofluoromethane (TCFM). The concentrations of TCE trended from 10 µg/kg at 10 feet bgs, reached a maximum of 140 µg/kg at 25 feet bgs, decreased to 8 µg/kg at 35 feet bgs, and <5 µg/kg at 40 feet bgs.

## CONCLUSIONS

Based upon the results of the Phase II Subsurface Investigation and this additional investigation, Kennedy/Jenks concludes the following:

- The lack of detections in soil samples from boring 15A suggests that the soil contamination does not extend laterally beyond the concrete pad to the northwest.

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- The VOCs detected in boring 15B reach maximum concentrations at a depth of 25 feet bgs, and do not extend vertically more than 35 feet bgs.
- The maximum concentrations in boring 15B correspond in depth with the maximum concentrations found in boring 15.
- In general the concentrations of contaminants are lower at the corresponding depths in boring 15B than in boring 15. As an exception, the 1,1-DCE level is higher in 15B at 25 feet bgs than in boring 15. These data suggest that boring 15 is closer to the source of the soil contamination than boring 15B, and that the contamination dissipates over a short distance. A drain located close to boring 15 may represent the source for these compounds in the soil. The soil should be closely monitored when excavating in this vicinity.

Kennedy/Jenks appreciates the opportunity to perform this additional investigation. Should you require additional information, or have any questions, please contact the undersigned.

Very truly yours,

KENNEDY/JENKS CONSULTANTS

for   
Charles (Rus) Purcell, R.G.  
Project Manager



Jay Knight  
Geologist

Attachments  
95401901.024

TABLE 1  
SUMMARY OF SOIL SAMPLE ANALYTICAL RESULTS- DETECTED ORGANIC COMPOUNDS<sup>(a)</sup>  
FOLLOW-UP SUBSURFACE INVESTIGATION

Douglas Aircraft Company C-6 Facility  
Torrance, California  
July 1996  
KJ 954019.01

Boring Location	Sample I.D.	Sample Depth (ft. bgs <sup>b</sup> )	1,1-DCE (µg/kg)	PCE (µg/kg)	TCE (µg/kg)	TCFM (µg/kg)
Method Detection Limit			5	5	5	5
Bldg. 29	15A-10	10				
	15A-25	25				
	15A-30	30				
	15A-35	35				
	15A-40	40				
Bldg. 29	15B-10	10			10	
	15B-25	25	30	56	140	6
	15B-30	30		6	78	
	15B-35	35			8	
	15B-40	40				

Table Key:

  Result did not exceed Method Detection Limit.

µg/kg - micrograms per kilogram

DCE - Dichloroethene

PCE - Tetrachloroethene

TCE - Trichloroethene

TCFM - Trichlorofluoromethane

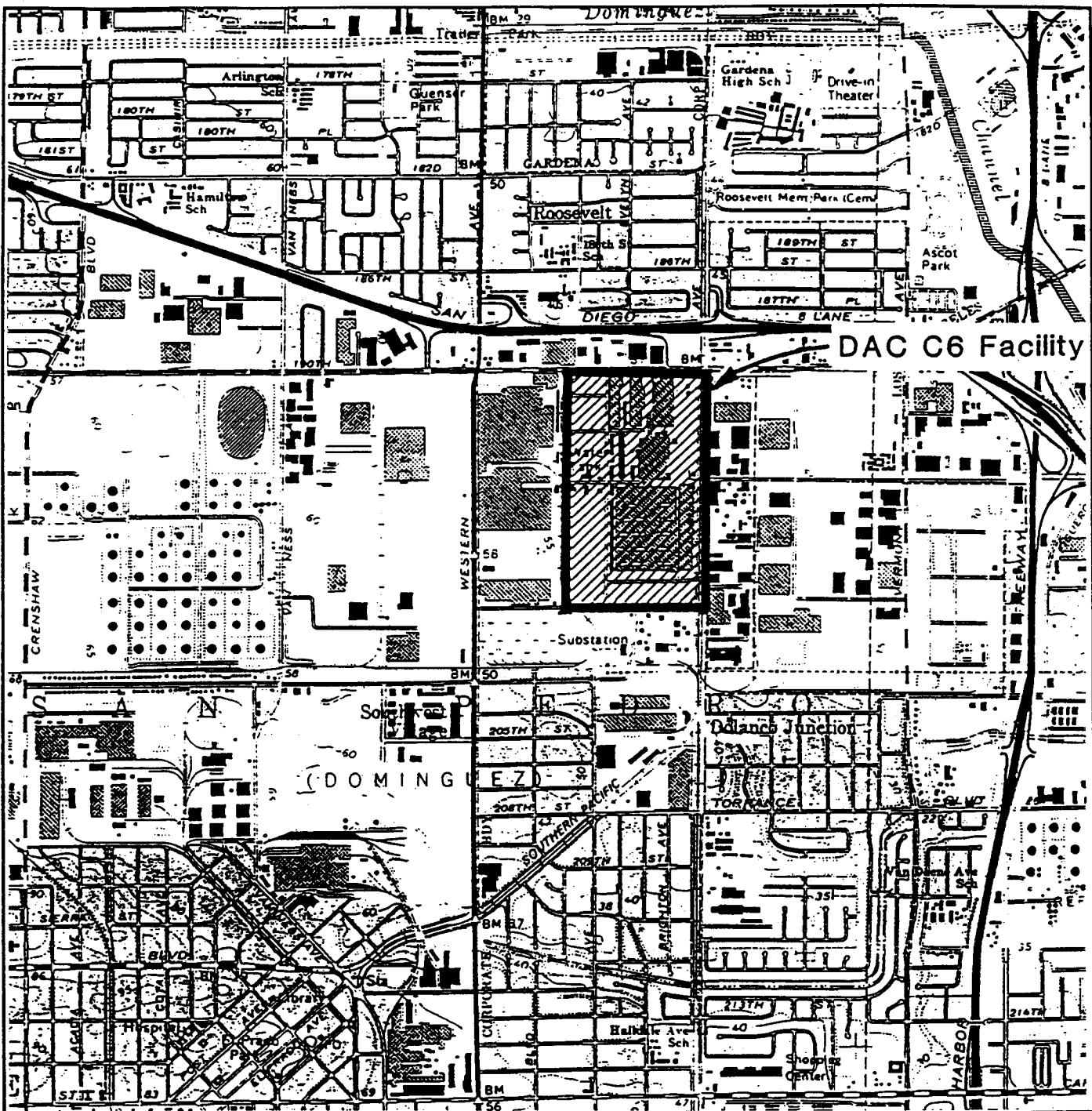
Table Notes:

a) Table presents data for compounds detected one or more times and includes all samples analyzed.

Samples were collected on 15 July 1996.

b) Below Ground Surface

c) Volatile Organic compounds analyzed per EPA Method 8010/8020.



Base Map: U.S.G.S. 7.5 Minute Topographic Map,  
Torrance, California Quadrangle, 1981.

**Kennedy/Jenks Consultants**

C-6 Douglas Aircraft Company Complex  
19503 S. Normandie Ave.  
Torrance, California

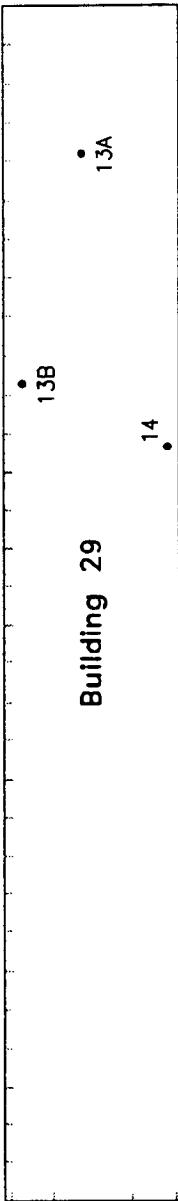
Facility Location Map

August 1996  
K/J 954019.01

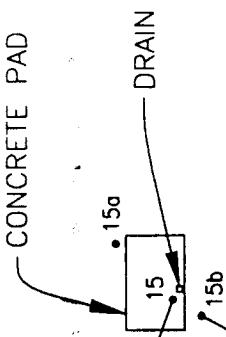
Figure 1

0 2000 4000  
Approximate Scale in Feet





CONCRETE PAD



Sample Site 15

Depth (ft)	RH (mg/Kg)	Volatile Organic Compounds (ug/Kg)				
		1,1-DCA	1,1-DCE	PCE	1,1,1-TCA	1,1,2-TCA
5	< 10	21.0	< 5	69.9	< 5	5.4
10	< 10	23.7	< 5	56.8	7.4	24.5
15	NA	< 5	< 5	< 5	< 5	17.8
20	NA	18.4	< 5	101.8	< 5	14.8
25	NA	60.0	18.6	202.0	13.5	11.5
						200.0

Sample Site 15b

Depth (ft)	Volatile Organic Compounds (ug/Kg)				
	1,1-DCE	PCE	TCE	TCFM	TCE
10	< 5	< 5	10	< 5	5
25	30	56	140	< 5	5
30	< 5	6	78	6	5
35	< 5	< 5	8	< 5	5
40	< 5	< 5	< 5	< 5	< 5

Legend:

- Phase II approximate boring locations.
- TRPH Total Recoverable Petroleum Hydrocarbons
- 1,1-DCA 1,1-Dichloroethane
- 1,1-DCE 1,1-Dichloroethene
- 1,1,1-TCA 1,1,1-Trichloroethane
- 1,1,2-TCA 1,1,2-Trichloroethane
- PCE Perchloroethene
- TCE Trichloroethene
- TCFM Trichlorofluoromethane
- <10 Result fell below the given method detection limit
- NA Not Analyzed
- mg/Kg milligrams per Kilogram
- µg/Kg micrograms per Kilogram



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K/J 954019.01

Figure 2

**Kennedy/Jenks Consultants**

C-6 Douglas Aircraft Company Complex  
19503 S. Normandie Ave.  
Torrance, California

Boring Locations  
and Chemical Distribution Map

August 1996  
K/J 954019.01

## Boring Log

**Kennedy/Jenks Consultants**

## **Appendix A**

### **Boring Logs**

## Boring Log

Kennedy/Jenks Consultants

BORING LOCATION <b>Hazardous Waste Accumulation Area</b>							Boring Name <b>15B</b>		
DRILLING COMPANY <b>Maness</b>				DRILLER <b>Pete</b>					
DRILLING METHOD (S) <b>Geoprobe</b>				DRILL BIT (S) SIZE <b>2 inches</b>					
DEPTH TO WATER not encountered				ELEVATION					
LOGGED BY <b>J. Knight</b>				TOTAL DEPTH <b>41 feet</b>					
<b>SAMPLES</b>									
Driven	Recovered	Collected	Head Space Reading (in)	Depth (feet)	Lithology	USCS Log	Munsell Color	SOIL DESCRIPTION AND DRILLING REMARKS	
								Concrete 10 inches PID background = 5.8 ppm	
				5.8				Silty CLAY: mottled dark olive brown and very dark grayish brown, slightly moist, medium plasticity firm	
				6.6				dark olive brown, some very fine sand, moist, firm	
				6.6				ML	
				15		2.5Y/4/3		Sandy SILT: olive brown, very fine to fine, slightly moist, firm	
				6.5				increasing sand content	
				7.0				ML	
				25				very moist, stiff	
				7.0				ML	
				30		2.5Y/3/3		dark olive brown, moist, stiff	
				7.1				SM	
				35		2.5Y/4/3		Silty SAND: olive brown, very fine to fine, moist, medium dense	
				6.8				SM	
				40		2.5Y/5/4		light olive brown, fine, decreasing silt content	
								Boring Completed at 41 feet.	

## **Appendix B**

### **Laboratory Report**

# HALOGENATED VOLATILE ORGANICS



Client I.D.: 15A-10'

Laboratory I.D.: 214610-002

Client: KENNEDY/JENKS CONSULTANTS

Matrix: Solid

Method: EPA 8010

Extraction: EPA 5030 Purge & Trap

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Compound	Result (ug/Kg)	Detection Limit	Analytical Notes	Method	Detection Limit	Analytical Notes	
						Blank	
Bromodichloromethane	ND	5		ND	5		
Bromoform	ND	5		ND	5		
Bromomethane	ND	10		ND	10		
Carbon tetrachloride	ND	5		ND	5		
Chlorobenzene	ND	5		ND	5		
Chloroethane	ND	10		ND	10		
Chloroform	ND	5		ND	5		
Chloromethane	ND	10		ND	10		
Dibromochloromethane	ND	5		ND	5		
1,2-Dichlorobenzene	ND	5		ND	5		
1,3-Dichlorobenzene	ND	5		ND	5		
1,4-Dichlorobenzene	ND	5		ND	5		
1,1-Dichloroethane	ND	5		ND	5		
1,2-Dichloroethane	ND	5		ND	5		
1,1-Dichloroethene	ND	5		ND	5		
cis-1,2-Dichloroethene	ND	5		ND	5		
trans-1,2-Dichloroethene	ND	5		ND	5		
1,2-Dichloropropane	ND	5		ND	5		
cis-1,3-Dichloropropene	ND	5		ND	5		
trans-1,3-Dichloropropene	ND	5		ND	5		
Freon 113	ND	5		ND	5		
Methylene chloride	ND	5		ND	5		
1,1,2,2-Tetrachloroethane	ND	5		ND	5		
Tetrachloroethene	ND	5		ND	5		
1,1,1-Trichloroethane	ND	5		ND	5		
1,1,2-Trichloroethane	ND	5		ND	5		
Trichloroethene	ND	5		ND	5		
Trichlorofluoromethane	ND	5		ND	5		
Vinyl chloride	ND	10		ND	10		
						Sample	Method Blank
						Date Sampled:	07/15/96
							N/A
						Date Analyzed:	07/16/96
							07/16/96

## Quality Control Data Summary

Surrogate Recovery Data				Laboratory Control Sample, Matrix Spike/Matrix Spike Duplicate Data									
Compound	Spike	Percent	QC	Batch I.D.: 12719g6f		Sample I.D.: 214610-002							
	Amount (ug/Kg)	Recovery	Limits	Compounds	Spike Amt. (ug/Kg)	LCS %Rec.	QC Limits	Spike %Rec.	Spk Dup %Rec.	QC Limits	RPD	QC Limits	
p-Bromofluorobenzene	50	92	64-138	1,1-Dichloroethene	10	86	80-120	82	78	59-172	5	22	
				Trichloroethene	10	103	80-120	105	101	62-137	4	24	
				Chlorobenzene	10	99	80-120	95	94	60-133	1	21	



Since 1878

Curtis & Tompkins, Ltd. General Analytical Laboratories

2495 Da Vinci, Irvine CA 92714

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## LABORATORY REPORT

Laboratory Number: 214610

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Date Received: 07/15/96

Date Reported: 07/19/96

Issued To: KENNEDY/JENKS CONSULTANTS  
2151 MICHELSON  
IRVINE, CA  
ATTN: JAY KNIGHT

Project I.D.: 954019.01

Location: DOUGLAS AIRCRAFT

Report On: SIX SOLID SAMPLES ANALYZED AS SPECIFIED ON ATTACHED CHAIN OF CUSTODY

This report certifies that the samples were received in good condition (i.e. intact, chilled, and/or preserved appropriately) and that strict chain of custody procedures were adhered to at all times. It further certifies that the methods of analysis used are in fact those listed within this report and that Curtis & Tompkins, Ltd. has current certification for all work performed in the laboratory. Exceptions to this statement are specifically noted in the analytical report or on the attached chain of custody.

Reviewed By:


Berkeley

Irvine

# HALOGENATED VOLATILE ORGANICS



Client I.D.: 15A-25'

Laboratory I.D.: 214610-005

Client: KENNEDY/JENKS CONSULTANTS

Matrix: Solid

Method: EPA 8010

Extraction: EPA 5030 Purge & Trap

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Compound	Result (ug/Kg)	Detection Limit	Analytical Notes	Method Blank	Detection Limit	Analytical Notes		
Bromodichloromethane	ND	5		ND	5			
Bromoform	ND	5		ND	5			
Bromomethane	ND	10		ND	10			
Carbon tetrachloride	ND	5		ND	5			
Chlorobenzene	ND	5		ND	5			
Chloroethane	ND	10		ND	10			
Chloroform	ND	5		ND	5			
Chloromethane	ND	10		ND	10			
Dibromochloromethane	ND	5		ND	5			
1,2-Dichlorobenzene	ND	5		ND	5			
1,3-Dichlorobenzene	ND	5		ND	5			
1,4-Dichlorobenzene	ND	5		ND	5			
1,1-Dichloroethane	ND	5		ND	5			
1,2-Dichloroethane	ND	5		ND	5			
1,1-Dichloroethene	ND	5		ND	5			
cis-1,2-Dichloroethene	ND	5		ND	5			
trans-1,2-Dichloroethene	ND	5		ND	5			
1,2-Dichloropropane	ND	5		ND	5			
cis-1,3-Dichloropropene	ND	5		ND	5			
trans-1,3-Dichloropropene	ND	5		ND	5			
Freon 113	ND	5		ND	5			
Methylene chloride	ND	5		ND	5			
1,1,2,2-Tetrachloroethane	ND	5		ND	5			
Tetrachloroethene	ND	5		ND	5			
1,1,1-Trichloroethane	ND	5		ND	5			
1,1,2-Trichloroethane	ND	5		ND	5			
Trichloroethene	ND	5		ND	5			
Trichlorofluoromethane	ND	5		ND	5			
Vinyl chloride	ND	10		ND	10			
						Sample	Method Blank	
						Date Sampled:	07/15/96	N/A
						Date Analyzed:	07/17/96	07/16/96

## Quality Control Data Summary

Surrogate Recovery Data				Laboratory Control Sample, Matrix Spike/Matrix Spike Duplicate Data									
Compound	Spike Amount (ug/Kg)	Percent Recovery	QC Limits	Batch I.D.: 12719g6f			Sample I.D.: 214610-002						
				Compounds	Spike Amt. (ug/Kg)	LCS %Rec.	QC Limits	Spike %Rec.	Spk Dup %Rec.	QC Limits	RPD	QC Limits	
p-Bromofluorobenzene	50	98	64-138	1,1-Dichloroethene	10	86	80-120	82	78	59-172	5	22	
				Trichloroethene	10	103	80-120	105	101	62-137	4	24	
				Chlorobenzene	10	99	80-120	95	94	60-133	1	21	

# HALOGENATED VOLATILE ORGANICS



Client I.D.: 15A-30'

Laboratory I.D.: 214610-006

Client: KENNEDY/JENKS CONSULTANTS

Matrix: Solid

Method: EPA 8010

Extraction: EPA 5030 Purge & Trap

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Compound	Result (ug/Kg)	Detection Limit	Analytical Notes	Method Blank	Detection Limit	Analytical Notes		
Bromodichloromethane	ND	5		ND	5			
Bromoform	ND	5		ND	5			
Bromomethane	ND	10		ND	10			
Carbon tetrachloride	ND	5		ND	5			
Chlorobenzene	ND	5		ND	5			
Chloroethane	ND	10		ND	10			
Chloroform	ND	5		ND	5			
Chloromethane	ND	10		ND	10			
Dibromochloromethane	ND	5		ND	5			
1,2-Dichlorobenzene	ND	5		ND	5			
1,3-Dichlorobenzene	ND	5		ND	5			
1,4-Dichlorobenzene	ND	5		ND	5			
1,1-Dichloroethane	ND	5		ND	5			
1,2-Dichloroethane	ND	5		ND	5			
1,1-Dichloroethene	ND	5		ND	5			
cis-1,2-Dichloroethene	ND	5		ND	5			
trans-1,2-Dichloroethene	ND	5		ND	5			
1,2-Dichloropropane	ND	5		ND	5			
cis-1,3-Dichloropropene	ND	5		ND	5			
trans-1,3-Dichloropropene	ND	5		ND	5			
Freon 113	ND	5		ND	5			
Methylene chloride	ND	5		ND	5			
1,1,2,2-Tetrachloroethane	ND	5		ND	5			
Tetrachloroethene	ND	5		ND	5			
1,1,1-Trichloroethane	ND	5		ND	5			
1,1,2-Trichloroethane	ND	5		ND	5			
Trichloroethene	ND	5		ND	5			
Trichlorofluoromethane	ND	5		ND	5			
Vinyl chloride	ND	10		ND	10			
						Sample	Method Blank	
						Date Sampled:	07/15/96	N/A
						Date Analyzed:	07/17/96	07/16/96

## Quality Control Data Summary

Surrogate Recovery Data				Laboratory Control Sample, Matrix Spike/Matrix Spike Duplicate Data									
Compound	Spike Amount (ug/Kg)	Percent Recovery	QC Limits	Batch I.D.: 12719g6f		Sample I.D.: 214610-002							
				Compounds	(ug/Kg)	Spike Amt.	LCS %Rec.	QC Limits	Spike %Rec.	Spk Dup %Rec.	QC Limits	RPD	QC Limits
p-Bromofluorobenzene	50	91	64-138	1,1-Dichloroethene		10	86	80-120	82	78	59-172	5	22
				Trichloroethene		10	103	80-120	105	101	62-137	4	24
				Chlorobenzene		10	99	80-120	95	94	60-133	1	21

# HALOGENATED VOLATILE ORGANICS



Client I.D.: 15A-35'

Laboratory I.D.: 214610-007

Client: KENNEDY/JENKS CONSULTANTS

Matrix: Solid

Method: EPA 8010

Extraction: EPA 5030 Purge & Trap

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Compound	Result (ug/Kg)	Detection Limit	Analytical Notes	Method Blank	Detection Limit	Analytical Notes		
Bromodichloromethane	ND	5		ND	5			
Bromoform	ND	5		ND	5			
Bromomethane	ND	10		ND	10			
Carbon tetrachloride	ND	5		ND	5			
Chlorobenzene	ND	5		ND	5			
Chloroethane	ND	10		ND	10			
Chloroform	ND	5		ND	5			
Chloromethane	ND	10		ND	10			
Dibromochloromethane	ND	5		ND	5			
1,2-Dichlorobenzene	ND	5		ND	5			
1,3-Dichlorobenzene	ND	5		ND	5			
1,4-Dichlorobenzene	ND	5		ND	5			
1,1-Dichloroethane	ND	5		ND	5			
1,2-Dichloroethane	ND	5		ND	5			
1,1-Dichloroethene	ND	5		ND	5			
cis-1,2-Dichloroethene	ND	5		ND	5			
trans-1,2-Dichloroethene	ND	5		ND	5			
1,2-Dichloropropane	ND	5		ND	5			
cis-1,3-Dichloropropene	ND	5		ND	5			
trans-1,3-Dichloropropene	ND	5		ND	5			
Freon 113	ND	5		ND	5			
Methylene chloride	ND	5		ND	5			
1,1,2,2-Tetrachloroethane	ND	5		ND	5			
Tetrachloroethene	ND	5		ND	5			
1,1,1-Trichloroethane	ND	5		ND	5			
1,1,2-Trichloroethane	ND	5		ND	5			
Trichloroethene	ND	5		ND	5			
Trichlorofluoromethane	ND	5		ND	5			
Vinyl chloride	ND	10		ND	10			
						Sample	Method Blank	
						Date Sampled:	07/15/96	N/A
						Date Analyzed:	07/17/96	07/16/96

## Quality Control Data Summary

Surrogate Recovery Data				Laboratory Control Sample, Matrix Spike/Matrix Spike Duplicate Data									
Compound	Spike Amount (ug/Kg)	Percent Recovery	QC Limits	Batch I.D.: 12719g6f		Sample I.D.: 214610-002							
				Compounds	Spike Amt. (ug/Kg)	LCS %Rec.	QC Limits	Spike %Rec.	Spk Dup %Rec.	QC Limits	RPD	QC Limits	
p-Bromofluorobenzene	50	80	64-138	1,1-Dichloroethene	10	86	80-120	82	78	59-172	5	22	
				Trichloroethene	10	103	80-120	105	101	62-137	4	24	
				Chlorobenzene	10	99	80-120	95	94	60-133	1	21	

# HALOGENATED VOLATILE ORGANICS

Client I.D.: 15A-40'

Matrix: Solid

Laboratory I.D.: 214610-008

Method: EPA 8010

Client: KENNEDY/JENKS CONSULTANTS

Extraction: EPA 5030 Purge &amp; Trap

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Compound	Result (ug/Kg)	Detection Limit	Analytical Notes	Method Blank	Detection Limit	Analytical Notes		
Bromodichloromethane	ND	5		ND	5			
Bromoform	ND	5		ND	5			
Bromomethane	ND	10		ND	10			
Carbon tetrachloride	ND	5		ND	5			
Chlorobenzene	ND	5		ND	5			
Chloroethane	ND	10		ND	10			
Chloroform	ND	5		ND	5			
Chloromethane	ND	10		ND	10			
Dibromochloromethane	ND	5		ND	5			
1,2-Dichlorobenzene	ND	5		ND	5			
1,3-Dichlorobenzene	ND	5		ND	5			
1,4-Dichlorobenzene	ND	5		ND	5			
1,1-Dichloroethane	ND	5		ND	5			
1,2-Dichloroethane	ND	5		ND	5			
1,1-Dichloroethene	ND	5		ND	5			
cis-1,2-Dichloroethene	ND	5		ND	5			
trans-1,2-Dichloroethene	ND	5		ND	5			
1,2-Dichloropropane	ND	5		ND	5			
cis-1,3-Dichloropropene	ND	5		ND	5			
trans-1,3-Dichloropropene	ND	5		ND	5			
Freon 113	ND	5		ND	5			
Methylene chloride	ND	5		ND	5			
1,1,2,2-Tetrachloroethane	ND	5		ND	5			
Tetrachloroethene	ND	5		ND	5			
1,1,1-Trichloroethane	ND	5		ND	5			
1,1,2-Trichloroethane	ND	5		ND	5			
Trichloroethene	ND	5		ND	5			
Trichlorofluoromethane	ND	5		ND	5			
Vinyl chloride	ND	10		ND	10			
						Sample	Method Blank	
						Date Sampled:	07/15/96	N/A
						Date Analyzed:	07/17/96	07/16/96

## Quality Control Data Summary

Surrogate Recovery Data				Laboratory Control Sample, Matrix Spike/Matrix Spike Duplicate Data									
Compound	Spike Amount (ug/Kg)	Percent Recovery	QC Limits	Batch I.D.: 12719g6f		Sample I.D.: 214610-002							
	Compounds	Spike Amt. (ug/Kg)	LCS %Rec.	QC Limits	Spike %Rec.	Spk Dup %Rec.	QC Limits	RPD	QC Limits				
p-Bromofluorobenzene	50	86	64-138	1,1-Dichloroethene	10	86	80-120	82	78	59-172	5	22	
				Trichloroethene	10	103	80-120	105	101	62-137	4	24	
				Chlorobenzene	10	99	80-120	95	94	60-133	1	21	

# HALOGENATED VOLATILE ORGANICS

Client I.D.: DUP1-071596

Laboratory I.D.: 214610-009

Client: KENNEDY/JENKS CONSULTANTS

Matrix: Solid

Method: EPA 8010

Extraction: EPA 5030 Purge &amp; Trap

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Compound	Result (ug/Kg)	Detection Limit	Analytical Notes	Method Blank	Detection Limit	Analytical Notes		
Bromodichloromethane	ND	5		ND	5			
Bromoform	ND	5		ND	5			
Bromomethane	ND	10		ND	10			
Carbon tetrachloride	ND	5		ND	5			
Chlorobenzene	ND	5		ND	5			
Chloroethane	ND	10		ND	10			
Chloroform	ND	5		ND	5			
Chloromethane	ND	10		ND	10			
Dibromochloromethane	ND	5		ND	5			
1,2-Dichlorobenzene	ND	5		ND	5			
1,3-Dichlorobenzene	ND	5		ND	5			
1,4-Dichlorobenzene	ND	5		ND	5			
1,1-Dichloroethane	ND	5		ND	5			
1,2-Dichloroethane	ND	5		ND	5			
1,1-Dichloroethene	ND	5		ND	5			
cis-1,2-Dichloroethene	ND	5		ND	5			
trans-1,2-Dichloroethene	ND	5		ND	5			
1,2-Dichloropropane	ND	5		ND	5			
cis-1,3-Dichloropropene	ND	5		ND	5			
trans-1,3-Dichloropropene	ND	5		ND	5			
Freon 113	ND	5		ND	5			
Methylene chloride	ND	5		ND	5			
1,1,2,2-Tetrachloroethane	ND	5		ND	5			
Tetrachloroethene	ND	5		ND	5			
1,1,1-Trichloroethane	ND	5		ND	5			
1,1,2-Trichloroethane	ND	5		ND	5			
Trichloroethene	ND	5		ND	5			
Trichlorofluoromethane	ND	5		ND	5			
Vinyl chloride	ND	10		ND	10			
						Sample	Method Blank	
						Date Sampled:	07/15/96	N/A
						Date Analyzed:	07/17/96	07/16/96

## Quality Control Data Summary

Surrogate Recovery Data				Laboratory Control Sample, Matrix Spike/Matrix Spike Duplicate Data									
Compound	Spike Amount (ug/Kg)	Percent Recovery	QC Limits	Batch I.D.: 12719g6f		Sample I.D.: 214610-002							
				Compounds	Spike Amt. (ug/Kg)	LCS	QC Limits	Spike %Rec.	Spk Dup %Rec.	QC	RPD	QC Limits	
p-Bromofluorobenzene	50	82	64-138	1,1-Dichloroethene	10	86	80-120	82	78	59-172	5	22	
				Trichloroethene	10	103	80-120	105	101	62-137	4	24	
				Chlorobenzene	10	99	80-120	95	94	60-133	1	21	

# AROMATIC VOLATILE ORGANICS



Client I.D.: 15A-10'

Matrix: Solid

Laboratory I.D.: 214610-002

Method: EPA 8020

Client: KENNEDY/JENKS CONSULTANTS

Extraction: EPA 5030 Purge & Trap

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Compound	Result (ug/Kg)	Detection Limit	Analytical Notes	Method Blank	Detection Limit	Analytical Notes
Benzene	ND	5		ND	5	
Chlorobenzene	ND	5		ND	5	
1,2-Dichlorobenzene	ND	5		ND	5	
1,3-Dichlorobenzene	ND	5		ND	5	
1,4-Dichlorobenzene	ND	5		ND	5	
Ethylbenzene	ND	5		ND	5	
Toluene	ND	5		ND	5	
m,p-Xylenes	ND	5		ND	5	
o-Xylene	ND	5		ND	5	
						Sample      Method Blank
						Date Sampled: 07/15/96      N/A
						Date Analyzed: 07/16/96      07/16/96

## Quality Control Data Summary

Surrogate Recovery Data				Laboratory Control Sample, Matrix Spike/Matrix Spike Duplicate Data										
Compound	Spike Amount (ug/Kg)	Percent Recovery	QC Limits	Batch I.D.: 12719g6f      Sample I.D.: 214610-002										
	Compounds	Spike Amt. (ug/Kg)	LCS	QC Limits	Spike %Rec.	Spk Dup %Rec.	QC Limits	RPD	QC Limits					
1,4-Difluorobenzene	50	98	34-162	Benzene	10	95	80-120	94	94	66-142	<1	21		
				Toluene	10	92	80-120	89	88	59-139	1	21		
				Chlorobenzene	10	96	80-120	92	91	60-133	1	21		

# AROMATIC VOLATILE ORGANICS



Client I.D.: 15A-25'

Laboratory I.D.: 214610-005

Client: KENNEDY/JENKS CONSULTANTS

Matrix: Solid

Method: EPA 8020

Extraction: EPA 5030 Purge & Trap

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Compound	Result (ug/Kg)	Detection Limit	Analytical Notes	Method Blank	Detection Limit	Analytical Notes	
Benzene	ND	5		ND	5		
Chlorobenzene	ND	5		ND	5		
1,2-Dichlorobenzene	ND	5		ND	5		
1,3-Dichlorobenzene	ND	5		ND	5		
1,4-Dichlorobenzene	ND	5		ND	5		
Ethylbenzene	ND	5		ND	5		
Toluene	ND	5		ND	5		
m,p-Xylenes	ND	5		ND	5		
o-Xylene	ND	5		ND	5		
						Sample	Method Blank
						Date Sampled:	07/15/96
						Date Analyzed:	07/17/96
							07/16/96

## Quality Control Data Summary

Surrogate Recovery Data				Laboratory Control Sample, Matrix Spike/Matrix Spike Duplicate Data									
Compound	Spike Amount (ug/Kg)	Percent Recovery	QC Limits	Batch I.D.: 12719g6f		Sample I.D.: 214610-002							
				Compounds	Spike Amt. (ug/Kg)	LCS	QC Limits	Spike %Rec.	Spk Dup	QC	RPD	QC Limits	
1,4-Difluorobenzene	50	102	34-162	Benzene	10	95	80-120	94	94	66-142	<1	21	
				Toluene	10	92	80-120	89	88	59-139	1	21	
				Chlorobenzene	10	96	80-120	92	91	60-133	1	21	

# AROMATIC VOLATILE ORGANICS

Client I.D.: 15A-30'

Matrix: Solid

Laboratory I.D.: 214610-006

Method: EPA 8020

Client: KENNEDY/JENKS CONSULTANTS

Extraction: EPA 5030 Purge &amp; Trap

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Compound	Result (ug/Kg)	Detection Limit	Analytical Notes	Method Blank	Detection Limit	Analytical Notes
Benzene	ND	5		ND	5	
Chlorobenzene	ND	5		ND	5	
1,2-Dichlorobenzene	ND	5		ND	5	
1,3-Dichlorobenzene	ND	5		ND	5	
1,4-Dichlorobenzene	ND	5		ND	5	
Ethylbenzene	ND	5		ND	5	
Toluene	ND	5		ND	5	
m,p-Xylenes	ND	5		ND	5	
o-Xylene	ND	5		ND	5	
						Sample      Method Blank
						Date Sampled: 07/15/96      N/A
						Date Analyzed: 07/17/96      07/16/96

## Quality Control Data Summary

Surrogate Recovery Data				Laboratory Control Sample, Matrix Spike/Matrix Spike Duplicate Data										
Compound	Spike Amount (ug/Kg)	Percent Recovery	QC Limits	Batch I.D.: 12719g6f      Sample I.D.: 214610-002										
				Compounds	Spike Amt.	LCS %Rec.	QC Limits	%Rec.	Spk Dup	QC Limits	RPD	QC Limits		
1,4-Difluorobenzene	50	100	34-162	Benzene	10	95	80-120	94	94	66-142	<1	21		
				Toluene	10	92	80-120	89	88	59-139	1	21		
				Chlorobenzene	10	96	80-120	92	91	60-133	1	21		

# AROMATIC VOLATILE ORGANICS



Client I.D.: 15A-35'

Laboratory I.D.: 214610-007

Client: KENNEDY/JENKS CONSULTANTS

Matrix: Solid

Method: EPA 8020

Extraction: EPA 5030 Purge & Trap

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Compound	Result (ug/Kg)	Detection Limit	Analytical Notes	Method Blank	Detection Limit	Analytical Notes		
Benzene	ND	5		ND	5			
Chlorobenzene	ND	5		ND	5			
1,2-Dichlorobenzene	ND	5		ND	5			
1,3-Dichlorobenzene	ND	5		ND	5			
1,4-Dichlorobenzene	ND	5		ND	5			
Ethylbenzene	ND	5		ND	5			
Toluene	ND	5		ND	5			
m,p-Xylenes	ND	5		ND	5			
o-Xylene	ND	5		ND	5			
						Sample	Method Blank	
						Date Sampled:	07/15/96	N/A
						Date Analyzed:	07/17/96	07/16/96

## Quality Control Data Summary

Surrogate Recovery Data				Laboratory Control Sample, Matrix Spike/Matrix Spike Duplicate Data									
Compound	Spike Amount (ug/Kg)	Percent Recovery	QC Limits	Compounds		Spike Amt. (ug/Kg)	LCS %Rec.	QC Limits	Spike %Rec.	Spk Dup %Rec.	QC Limits	RPD	QC Limits
1,4-Difluorobenzene	50	100	34-162	Benzene		10	95	80-120	94	94	66-142	<1	21
				Toluene		10	92	80-120	89	88	59-139	1	21
				Chlorobenzene		10	96	80-120	92	91	60-133	1	21

## **AROMATIC VOLATILE ORGANICS**



Client I.D.: 15A-40'

## Matrix: Solid

Laboratory I.D.: 214610-008

Method: EPA 8020

Client: KENNEDY/JENKS CONSULTANTS

## **Extraction: EPA 5030 Purge & Trap**

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Compound	Result (ug/Kg)	Detection	Analytical	Method Blank	Detection Limit	Analytical Notes
		Limit	Notes			
Benzene	ND	5		ND	5	
Chlorobenzene	ND	5		ND	5	
1,2-Dichlorobenzene	ND	5		ND	5	
1,3-Dichlorobenzene	ND	5		ND	5	
1,4-Dichlorobenzene	ND	5		ND	5	
Ethylbenzene	ND	5		ND	5	
Toluene	ND	5		ND	5	
m,p-Xylenes	ND	5		ND	5	
o-Xylene	ND	5		ND	5	

## **Quality Control Data Summary**

Surrogate Recovery Data				Laboratory Control Sample, Matrix Spike/Matrix Spike Duplicate Data										
Compound	Spike	Percent	QC	Batch I.D.: 12719g6f				Sample I.D.: 214610-002						
	Amount	Recovery	Limits	Compounds	Spike	LCS	QC	Spike	Spk Dup	QC	RPD	QC	Limits	
1,4-Difluorobenzene	50	100	34-162	Benzene	10	95	80-120	94	94	66-142	<1	21		
				Toluene	10	92	80-120	89	88	59-139	1	21		
				Chlorobenzene	10	96	80-120	92	91	60-133	1	21		

# AROMATIC VOLATILE ORGANICS

Client I.D.: DUP1-071596

Matrix: Solid

Laboratory I.D.: 214610-009

Method: EPA 8020

Client: KENNEDY/JENKS CONSULTANTS

Extraction: EPA 5030 Purge & Trap

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Compound	Result (ug/Kg)	Detection Limit	Analytical Notes	Method	Detection Limit	Analytical Notes	
Benzene	ND	5		ND	5		
Chlorobenzene	ND	5		ND	5		
1,2-Dichlorobenzene	ND	5		ND	5		
1,3-Dichlorobenzene	ND	5		ND	5		
1,4-Dichlorobenzene	ND	5		ND	5		
Ethylbenzene	ND	5		ND	5		
Toluene	ND	5		ND	5		
m,p-Xylenes	ND	5		ND	5		
o-Xylene	ND	5		ND	5		
						Sample	Method Blank
						Date Sampled:	07/15/96
							N/A
						Date Analyzed:	07/17/96
							07/16/96

## Quality Control Data Summary

Surrogate Recovery Data				Laboratory Control Sample, Matrix Spike/Matrix Spike Duplicate Data									
Compound	Spike Amount (ug/Kg)	Percent Recovery	QC Limits	Batch I.D.: 12719g6f		Sample I.D.: 214610-002							
				Compounds	Spike Amt.	LCS %Rec.	QC Limits	Spike %Rec.	Spk Dup %Rec.	QC Limits	RPD	QC Limits	
1,4-Difluorobenzene	50	100	34-162	Benzene	10	95	80-120	94	94	66-142	<1	21	
				Toluene	10	92	80-120	89	88	59-139	1	21	
				Chlorobenzene	10	96	80-120	92	91	60-133	1	21	



## ABBREVIATIONS

BS/BSD - Blank Spike / Blank Spike Duplicate

BTEX - Benzene, Toluene, Ethyl Benzene, and Total Xylenes.

CCR - California Code of Regulations.

DHS - California Department of Health Services.

EPA - United States Environmental Protection Agency.

LCS - Laboratory Control Spike

LUFT - Leaking Underground Fuel Tank.

MDL - Method Detection Limit

NA - Not Applicable.

NC - Not Calculable

ND - Not Detected at or above the defined detection limit.

PQL - Practical Quantitation Limit

RPD - Relative percent difference.

STLC - Soluble Threshold Limit Concentration.

Surr. - Surrogates.

TCLP - Toxicity Characteristic Leaching Procedure.

TEH - Total Extractable Petroleum Hydrocarbons.

Title 26 - Title 26 of the California Code of Regulations (CCR).

TR~ - Trace, estimated value .

TTLC - Total Threshold Limit Concentration.

TVH - Total Volatile Hydrocarbons.

WET - Waste Extraction Test.

## UNITS

cm<sup>3</sup> - Cubic centimeter

umhos/cm - uS/cm - Micro Siemens/centimeter

Kg - kilogram.

ppb - Parts per billion.

L - Liter.

ppm - Parts per million.

mg - Milligrams.

ug - Micrograms.

M<sup>3</sup> - Cubic meter.

ppbv - Parts per billion per unit volume



Since 1878

Curtis & Tompkins, Ltd. General Analytical Laboratories

2495 Da Vinci, Irvine CA 92714

Phone 714-252-9700

Fax 714-252-9701

## LABORATORY REPORT

Laboratory Number: 214611

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Date Received: 07/15/96

Date Reported: 07/19/96

Issued To: KENNEDY/JENKS CONSULTANTS  
2151 MICHELSON  
IRVINE, CA  
ATTN: JAY KNIGHT

Project I.D.: 954019.01

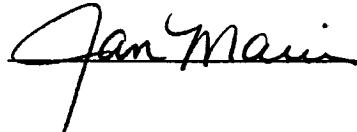
Location: DOUGLAS AIRCRAFT

Report On: FIVE SOLID SAMPLES ANALYZED AS SPECIFIED ON ATTACHED CHAIN OF CUSTODY

This report certifies that the samples were received in good condition (i.e. intact, chilled, and/or preserved appropriately) and that strict chain of custody procedures were adhered to at all times. It further certifies that the methods of analysis used are in fact those listed within this report and that Curtis & Tompkins, Ltd. has current certification for all work performed in the laboratory. Exceptions to this statement are specifically noted in the analytical report or on the attached chain of custody.

Reviewed By:

  
Rose Loh

  
Jan Main

Berkeley

Irvine

KENNEDY/JENKS CONSULTANTS

## SAMPLE CHAIN-OF-CUSTODY ANALYSIS REQUEST

- 200 New Stine Rd., #115, Bakersfield, CA 93309
- 530 South 338th St., Federal Way, WA 98003
- 17310 Red Hill Ave., #220, Irvine, CA 92714
- 2191 East Bayshore Rd., #200, Palo Alto, CA 943

- 5190 Neil Road, #300, Reno, NV 89502
- 3336 Bradshaw Rd., #140, Sacramento, CA 95827
- 303 Second St., San Francisco, CA 94107
- 1000 Hill Rd., #200, Ventura, CA 93003

## POSSIBLE HAZARDS:

Date	<u>7-15-96</u>	Report To	<u>Jay Knight</u>
Source of Samples	<u>Douglas Aircraft</u>	Company	<u>Kennedy / Jenkins</u>
Sampler Name	<u>Jay Knight</u>	Address	<u>2151 Michelson Dr., 10</u>
Phone	<u>714/261-1577</u>		<u>Irvine, CA 92715</u>
Project No.	<u>954019.01</u>	Phone	<u>714 - 261-1577</u>

(1) Write only one sample number in each space.

(2) Specify type of sample(s): Water (W), Solid (S), or indicate type.

(3) Mark each sample which should be composited in laboratory as follows: Place an "A" in box for each sample that should be composited into one sample; use sequential letter for additional groups.

Preservation of *Samoa*.  
(4)

WILLIAM HENRY

SAMPLE RECEIVED BY:

# HALOGENATED VOLATILE ORGANICS

Client I.D.: 15B-10'  
 Laboratory I.D.: 214611-002  
 Client: KENNEDY/JENKS CONSULTANTS

Matrix: Solid  
 Method: EPA 8010  
 Extraction: EPA 5030 Purge & Trap

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Compound	Result (ug/Kg)	Detection Limit	Analytical Notes	Method Blank	Detection Limit	Analytical Notes		
Bromodichloromethane	ND	5		ND	5			
Bromoform	ND	5		ND	5			
Bromomethane	ND	10		ND	10			
Carbon tetrachloride	ND	5		ND	5			
Chlorobenzene	ND	5		ND	5			
Chloroethane	ND	10		ND	10			
Chloroform	ND	5		ND	5			
Chloromethane	ND	10		ND	10			
Dibromochloromethane	ND	5		ND	5			
1,2-Dichlorobenzene	ND	5		ND	5			
1,3-Dichlorobenzene	ND	5		ND	5			
1,4-Dichlorobenzene	ND	5		ND	5			
1,1-Dichloroethane	ND	5		ND	5			
1,2-Dichloroethane	ND	5		ND	5			
1,1-Dichloroethene	ND	5		ND	5			
cis-1,2-Dichloroethene	ND	5		ND	5			
trans-1,2-Dichloroethene	ND	5		ND	5			
1,2-Dichloropropane	ND	5		ND	5			
cis-1,3-Dichloropropene	ND	5		ND	5			
trans-1,3-Dichloropropene	ND	5		ND	5			
Freon 113	ND	5		ND	5			
Methylene chloride	ND	5		ND	5			
1,1,2,2-Tetrachloroethane	ND	5		ND	5			
Tetrachloroethene	ND	5		ND	5			
1,1,1-Trichloroethane	ND	5		ND	5			
1,1,2-Trichloroethane	ND	5		ND	5			
Trichloroethene	10	5		ND	5			
Trichlorofluoromethane	ND	5		ND	5			
Vinyl chloride	ND	10		ND	10			
						Sample	Method Blank	
						Date Sampled:	07/15/96	N/A
						Date Analyzed:	07/17/96	07/16/96

## Quality Control Data Summary

Surrogate Recovery Data				Laboratory Control Sample, Matrix Spike/Matrix Spike Duplicate Data									
Compound	Spike Amount (ug/Kg)	Percent Recovery	QC Limits	Batch I.D.: 12723g6f      Sample I.D.: 214611-008									
				Compounds	Spike Amt. (ug/Kg)	LCS %Rec.	QC Limits	Spike %Rec.	Spk Dup %Rec.	QC Limits	RPD	QC Limits	
p-Bromofluorobenzene	50	93	64-138	1,1-Dichloroethene	10	86	80-120	75	79	59-172	5	22	
				Trichloroethene	10	103	80-120	108	115	62-137	6	24	
				Chlorobenzene	10	99	80-120	84	93	60-133	10	21	

# HALOGENATED VOLATILE ORGANICS



Client I.D.: 15B-25'

Laboratory I.D.: 214611-005

Client: KENNEDY/JENKS CONSULTANTS

Matrix: Solid

Method: EPA 8010

Extraction: EPA 5030 Purge & Trap

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Compound	Result (ug/Kg)	Detection Limit	Analytical Notes	Method Blank	Detection Limit	Analytical Notes		
Bromodichloromethane	ND	5		ND	5	a-Result from a 1:10 dilution analyzed on 7/17/96.		
Bromoform	ND	5		ND	5			
Bromomethane	ND	10		ND	10			
Carbon tetrachloride	ND	5		ND	5			
Chlorobenzene	ND	5		ND	5			
Chloroethane	ND	10		ND	10			
Chloroform	ND	5		ND	5			
Chloromethane	ND	10		ND	10			
Dibromochloromethane	ND	5		ND	5			
1,2-Dichlorobenzene	ND	5		ND	5			
1,3-Dichlorobenzene	ND	5		ND	5			
1,4-Dichlorobenzene	ND	5		ND	5			
1,1-Dichloroethane	ND	5		ND	5			
1,2-Dichloroethane	ND	5		ND	5			
1,1-Dichloroethene	30	5		ND	5			
cis-1,2-Dichloroethene	ND	5		ND	5			
trans-1,2-Dichloroethene	ND	5		ND	5			
1,2-Dichloropropane	ND	5		ND	5			
cis-1,3-Dichloropropene	ND	5		ND	5			
trans-1,3-Dichloropropene	ND	5		ND	5			
Freon 113	ND	5		ND	5			
Methylene chloride	ND	5		ND	5			
1,1,2,2-Tetrachloroethane	ND	5		ND	5			
Tetrachloroethene	56	5		ND	5			
1,1,1-Trichloroethane	ND	5		ND	5			
1,1,2-Trichloroethane	ND	5		ND	5			
Trichloroethene	140	50	a	ND	5			
Trichlorofluoromethane	6	5		ND	5			
Vinyl chloride	ND	10		ND	10			
						Sample	Method Blank	
						Date Sampled:	07/15/96	N/A
						Date Analyzed:	07/17/96	07/16/96

## Quality Control Data Summary

Compound	Surrogate Recovery Data			Laboratory Control Sample, Matrix Spike/Matrix Spike Duplicate Data									
	Spike Amount (ug/Kg)	Percent Recovery	QC Limits	Batch I.D.: 12723g6f			Sample I.D.: 214611-008						
p-Bromofluorobenzene	50	90	64-138	1,1-Dichloroethene	10	86	80-120	75	79	59-172	5	22	
				Trichloroethene	10	103	80-120	108	115	62-137	6	24	
				Chlorobenzene	10	99	80-120	84	93	60-133	10	21	

# HALOGENATED VOLATILE ORGANICS

Client I.D.: 15B-30'

Laboratory I.D.: 214611-006

Client: KENNEDY/JENKS CONSULTANTS

Matrix: Solid

Method: EPA 8010

Extraction: EPA 5030 Purge &amp; Trap

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Compound	Result (ug/Kg)	Detection Limit	Analytical Notes	Method Blank	Detection Limit	Analytical Notes		
Bromodichloromethane	ND	5		ND	5			
Bromoform	ND	5		ND	5			
Bromomethane	ND	10		ND	10			
Carbon tetrachloride	ND	5		ND	5			
Chlorobenzene	ND	5		ND	5			
Chloroethane	ND	10		ND	10			
Chloroform	ND	5		ND	5			
Chloromethane	ND	10		ND	10			
Dibromochloromethane	ND	5		ND	5			
1,2-Dichlorobenzene	ND	5		ND	5			
1,3-Dichlorobenzene	ND	5		ND	5			
1,4-Dichlorobenzene	ND	5		ND	5			
1,1-Dichloroethane	ND	5		ND	5			
1,2-Dichloroethane	ND	5		ND	5			
1,1-Dichloroethene	ND	5		ND	5			
cis-1,2-Dichloroethene	ND	5		ND	5			
trans-1,2-Dichloroethene	ND	5		ND	5			
1,2-Dichloropropane	ND	5		ND	5			
cis-1,3-Dichloropropene	ND	5		ND	5			
trans-1,3-Dichloropropene	ND	5		ND	5			
Freon 113	ND	5		ND	5			
Methylene chloride	ND	5		ND	5			
1,1,2,2-Tetrachloroethane	ND	5		ND	5			
Tetrachloroethene	6	5		ND	5			
1,1,1-Trichloroethane	ND	5		ND	5			
1,1,2-Trichloroethane	ND	5		ND	5			
Trichloroethene	78	5		ND	5			
Trichlorofluoromethane	ND	5		ND	5			
Vinyl chloride	ND	10		ND	10			
						Sample	Method Blank	
						Date Sampled:	07/15/96	N/A
						Date Analyzed:	07/17/96	07/16/96

## Quality Control Data Summary

Surrogate Recovery Data				Laboratory Control Sample, Matrix Spike/Matrix Spike Duplicate Data									
Compound	Spike Amount (ug/Kg)	Percent Recovery	QC Limits	Batch I.D.: 12723g6f		Sample I.D.: 214611-008							
				Compounds	Spike Amt. (ug/Kg)	LCS %Rec.	QC Limits	Spike %Rec.	Spk Dup %Rec.	QC Limits	RPD	QC Limits	
p-Bromofluorobenzene	50	85	64-138	1,1-Dichloroethene	10	86	80-120	75	79	59-172	5	22	
				Trichloroethene	10	103	80-120	108	115	62-137	6	24	
				Chlorobenzene	10	99	80-120	84	93	60-133	10	21	

# HALOGENATED VOLATILE ORGANICS

Client I.D.: 15B-35'  
Laboratory I.D.: 214611-007

Client: KENNEDY/JENKS CONSULTANTS

Matrix: Solid  
Method: EPA 8010  
Extraction: EPA 5030 Purge & Trap

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Compound	Result (ug/Kg)	Detection Limit	Analytical Notes	Method Blank	Detection Limit	Analytical Notes
Bromodichloromethane	ND	5		ND	5	
Bromoform	ND	5		ND	5	
Bromomethane	ND	10		ND	10	
Carbon tetrachloride	ND	5		ND	5	
Chlorobenzene	ND	5		ND	5	
Chloroethane	ND	10		ND	10	
Chloroform	ND	5		ND	5	
Chloromethane	ND	10		ND	10	
Dibromochloromethane	ND	5		ND	5	
1,2-Dichlorobenzene	ND	5		ND	5	
1,3-Dichlorobenzene	ND	5		ND	5	
1,4-Dichlorobenzene	ND	5		ND	5	
1,1-Dichloroethane	ND	5		ND	5	
1,2-Dichloroethane	ND	5		ND	5	
1,1-Dichloroethene	ND	5		ND	5	
cis-1,2-Dichloroethene	ND	5		ND	5	
trans-1,2-Dichloroethene	ND	5		ND	5	
1,2-Dichloropropane	ND	5		ND	5	
cis-1,3-Dichloropropene	ND	5		ND	5	
trans-1,3-Dichloropropene	ND	5		ND	5	
Freon 113	ND	5		ND	5	
Methylene chloride	ND	5		ND	5	
1,1,2,2-Tetrachloroethane	ND	5		ND	5	
Tetrachloroethene	ND	5		ND	5	
1,1,1-Trichloroethane	ND	5		ND	5	
1,1,2-Trichloroethane	ND	5		ND	5	
Trichloroethene	8	5		ND	5	
Trichlorofluoromethane	ND	5		ND	5	
Vinyl chloride	ND	10		ND	10	
						Sample      Method Blank
						Date Sampled: 07/15/96      N/A
						Date Analyzed: 07/17/96      07/16/96

## Quality Control Data Summary

Surrogate Recovery Data				Laboratory Control Sample, Matrix Spike/Matrix Spike Duplicate Data											
Compound	Spike Amount (ug/Kg)	Percent Recovery	QC Limits	Batch I.D.: 12723g6f				Sample I.D.: 214611-008							
				Compounds	Spike Amt. (ug/Kg)	LCS %Rec.	QC Limits	Spike %Rec.	Spk Dup %Rec.	QC Limits	RPD	QC Limits			
p-Bromofluorobenzene	50	85	64-138	1,1-Dichloroethene	10	86	80-120	75	79	59-172	5	22			
				Trichloroethene	10	103	80-120	108	115	62-137	6	24			
				Chlorobenzene	10	99	80-120	84	93	60-133	10	21			

# HALOGENATED VOLATILE ORGANICS

Client I.D.: 15B-40'

Laboratory I.D.: 214611-008

Client: KENNEDY/JENKS CONSULTANTS

Matrix: Solid

Method: EPA 8010

Extraction: EPA 5030 Purge &amp; Trap

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Compound	Result (ug/Kg)	Detection Limit	Analytical Notes	Method Blank	Detection Limit	Analytical Notes		
Bromodichloromethane	ND	5		ND	5			
Bromoform	ND	5		ND	5			
Bromomethane	ND	10		ND	10			
Carbon tetrachloride	ND	5		ND	5			
Chlorobenzene	ND	5		ND	5			
Chloroethane	ND	10		ND	10			
Chloroform	ND	5		ND	5			
Chloromethane	ND	10		ND	10			
Dibromochloromethane	ND	5		ND	5			
1,2-Dichlorobenzene	ND	5		ND	5			
1,3-Dichlorobenzene	ND	5		ND	5			
1,4-Dichlorobenzene	ND	5		ND	5			
1,1-Dichloroethane	ND	5		ND	5			
1,2-Dichloroethane	ND	5		ND	5			
1,1-Dichloroethene	ND	5		ND	5			
cis-1,2-Dichloroethene	ND	5		ND	5			
trans-1,2-Dichloroethene	ND	5		ND	5			
1,2-Dichloropropane	ND	5		ND	5			
cis-1,3-Dichloropropene	ND	5		ND	5			
trans-1,3-Dichloropropene	ND	5		ND	5			
Freon 113	ND	5		ND	5			
Methylene chloride	ND	5		ND	5			
1,1,2,2-Tetrachloroethane	ND	5		ND	5			
Tetrachloroethene	ND	5		ND	5			
1,1,1-Trichloroethane	ND	5		ND	5			
1,1,2-Trichloroethane	ND	5		ND	5			
Trichloroethene	ND	5		ND	5			
Trichlorofluoromethane	ND	5		ND	5			
Vinyl chloride	ND	10		ND	10			
						Sample	Method Blank	
						Date Sampled:	07/15/96	N/A
						Date Analyzed:	07/17/96	07/16/96

## Quality Control Data Summary

Surrogate Recovery Data				Laboratory Control Sample, Matrix Spike/Matrix Spike Duplicate Data									
Compound	Spike Amount (ug/Kg)	Percent Recovery	QC Limits	Batch I.D.: 12723g6f		Sample I.D.: 214611-008							
				Compounds	Spike Amt. (ug/Kg)	LCS	QC Limits	Spike %Rec.	Spk Dup %Rec.	QC	RPD	QC Limits	
p-Bromofluorobenzene	50	89	64-138	1,1-Dichloroethene	10	86	80-120	75	79	59-172	5	22	
				Trichloroethene	10	103	80-120	108	115	62-137	6,	24	
				Chlorobenzene	10	99	80-120	84	93	60-133	10	21	

# AROMATIC VOLATILE ORGANICS

Client I.D.: 15B-10'

Laboratory I.D.: 214611-002

Client: KENNEDY/JENKS CONSULTANTS

Matrix: Solid

Method: EPA 8020

Extraction: EPA 5030 Purge &amp; Trap

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Compound	Result (ug/Kg)	Detection Limit	Analytical Notes	Method Blank	Detection Limit	Analytical Notes	
Benzene	ND	5		ND	5		
Chlorobenzene	ND	5		ND	5		
1,2-Dichlorobenzene	ND	5		ND	5		
1,3-Dichlorobenzene	ND	5		ND	5		
1,4-Dichlorobenzene	ND	5		ND	5		
Ethylbenzene	ND	5		ND	5		
Toluene	ND	5		ND	5		
m,p-Xylenes	ND	5		ND	5		
o-Xylene	ND	5		ND	5		
						Sample	Method Blank
						Date Sampled:	07/15/96 N/A
						Date Analyzed:	07/17/96 07/16/96

## Quality Control Data Summary

Surrogate Recovery Data				Laboratory Control Sample, Matrix Spike/Matrix Spike Duplicate Data									
Compound	Spike Amount (ug/Kg)	Percent Recovery	QC Limits	Batch I.D.: 12723g6f		Sample I.D.: 214611-008							
				Compounds	Spike Amt. (ug/Kg)	LCS %Rec.	QC Limits	Spike %Rec.	Spk Dup %Rec.	QC Limits	RPD	QC Limits	
1,4-Difluorobenzene	50	100	34-162	Benzene	10	95	80-120	90	96	66-142	6	21	
				Toluene	10	92	80-120	85	92	59-139	8	21	
				Chlorobenzene	10	96	80-120	85	93	60-133	9	21	

# AROMATIC VOLATILE ORGANICS



Client I.D.: 15B-25'

Laboratory I.D.: 214611-005

Client: KENNEDY/JENKS CONSULTANTS

Matrix: Solid

Method: EPA 8020

Extraction: EPA 5030 Purge & Trap

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Compound	Result (ug/Kg)	Detection Limit	Analytical Notes	Method Blank	Detection Limit	Analytical Notes	
Benzene	ND	5		ND	5		
Chlorobenzene	ND	5		ND	5		
1,2-Dichlorobenzene	ND	5		ND	5		
1,3-Dichlorobenzene	ND	5		ND	5		
1,4-Dichlorobenzene	ND	5		ND	5		
Ethylbenzene	ND	5		ND	5		
Toluene	ND	5		ND	5		
m,p-Xylenes	ND	5		ND	5		
c-Xylene	ND	5		ND	5		
						Sample	Method Blank
						Date Sampled:	07/15/96
						Date Analyzed:	07/17/96
							07/16/96

## Quality Control Data Summary

Surrogate Recovery Data				Laboratory Control Sample, Matrix Spike/Matrix Spike Duplicate Data									
Compound	Spike Amount (ug/Kg)	Percent Recovery	QC Limits	Batch I.D.: 12723g6f		Sample I.D.: 214611-008							
				Compounds	Spike Amt. (ug/Kg)	LCS %Rec.	QC Limits	Spike %Rec.	Spk Dup %Rec.	QC Limits	RPD	QC Limits	
1,4-Difluorobenzene	50	101	34-162	Benzene	10	95	80-120	90	96	66-142	6	21	
				Toluene	10	92	80-120	85	92	59-139	8	21	
				Chlorobenzene	10	96	80-120	85	93	60-133	9	21	

# AROMATIC VOLATILE ORGANICS



Client I.D.: 15B-30'

Laboratory I.D.: 214611-006

Client: KENNEDY/JENKS CONSULTANTS

Matrix: Solid

Method: EPA 8020

Extraction: EPA 5030 Purge & Trap

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Compound	Result (ug/Kg)	Detection Limit	Analytical Notes	Method Blank	Detection Limit	Analytical Notes	
Benzene	ND	5		ND	5		
Chlorobenzene	ND	5		ND	5		
1,2-Dichlorobenzene	ND	5		ND	5		
1,3-Dichlorobenzene	ND	5		ND	5		
1,4-Dichlorobenzene	ND	5		ND	5		
Ethybenzene	ND	5		ND	5		
Toluene	ND	5		ND	5		
m,p-Xylenes	ND	5		ND	5		
o-Xylene	ND	5		ND	5		

	Sample	Method Blank
Date Sampled:	07/15/96	N/A
Date Analyzed:	07/17/96	07/16/96

## Quality Control Data Summary

Surrogate Recovery Data				Laboratory Control Sample, Matrix Spike/Matrix Spike Duplicate Data										
Compound	Spike Amount (ug/Kg)	Percent Recovery	QC Limits	Batch I.D.: 12723g6f		Sample I.D.: 214611-008								
				Compounds	Spike Amt. (ug/Kg)	LCS	QC Limits	Spike %Rec.	Spk Dup	QC %Rec.	RPD	QC Limits		
1,4-Difluorobenzene	50	102	34-162	Benzene	10	95	80-120	90	96	66-142	6	21		
				Toluene	10	92	80-120	85	92	59-139	8	21		
				Chlorobenzene	10	96	80-120	85	93	60-133	9	21		

# AROMATIC VOLATILE ORGANICS

Client I.D.: 15B-35'

Laboratory I.D.: 214611-007

Client: KENNEDY/JENKS CONSULTANTS

Matrix: Solid

Method: EPA 8020

Extraction: EPA 5030 Purge &amp; Trap

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Compound	Result (ug/Kg)	Detection Limit	Analytical Notes	Method Blank	Detection Limit	Analytical Notes	
Benzene	ND	5		ND	5		
Chlorobenzene	ND	5		ND	5		
1,2-Dichlorobenzene	ND	5		ND	5		
1,3-Dichlorobenzene	ND	5		ND	5		
1,4-Dichlorobenzene	ND	5		ND	5		
Ethylbenzene	ND	5		ND	5		
Toluene	ND	5		ND	5		
m,p-Xylenes	ND	5		ND	5		
o-Xylene	ND	5		ND	5		
						Sample	Method Blank
						Date Sampled:	07/15/96
						Date Analyzed:	07/17/96
							07/16/96

## Quality Control Data Summary

Surrogate Recovery Data				Laboratory Control Sample, Matrix Spike/Matrix Spike Duplicate Data									
Compound	Spike Amount (ug/Kg)	Percent Recovery	QC Limits	Batch I.D.: 12723g6f		Sample I.D.: 214611-008							
				Compounds	Spike Amt. (ug/Kg)	LCS	QC Limits	Spike %Rec.	Spk Dup	QC	RPD	QC	QC Limits
1,4-Difluorobenzene	50	102	34-162	Benzene	10	95	80-120	90	96	66-142	6	21	
				Toluene	10	92	80-120	85	92	59-139	8	21	
				Chlorobenzene	10	96	80-120	85	93	60-133	9	21	

## **AROMATIC VOLATILE ORGANICS**



Client I.D.: 15B-40

Laboratory I.D.: 214611-008

Client: KENNEDY/JENKS CONSULTANTS

### **Matrix: Solid**

### Method: EPA 8020

### Extraction: EPA 5030 Purge & Trap

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Compound	Result (ug/Kg)	Detection Limit	Analytical Notes	Method Blank	Detection Limit	Analytical Notes
Benzene	ND	5		ND	5	
Chlorobenzene	ND	5		ND	5	
1,2-Dichlorobenzene	ND	5		ND	5	
1,3-Dichlorobenzene	ND	5		ND	5	
1,4-Dichlorobenzene	ND	5		ND	5	
Ethylbenzene	ND	5		ND	5	
Toluene	ND	5		ND	5	
m,p-Xylenes	ND	5		ND	5	
o-Xylene	ND	5		ND	5	

### **Quality Control Data Summary**

Surrogate Recovery Data				Laboratory Control Sample, Matrix Spike/Matrix Spike Duplicate Data										
Compound	Spike Amount (ug/Kg)	Percent Recovery	QC Limits	Batch I.D.: 12723g6f				Sample I.D.: 214611-008						
	Compounds	Spike Amt. (ug/Kg)	LCS %-Rec.	QC Limits	Spike %Rec.	Spk Dup %Rec.	QC Limits	RPD	QC Limits					
1,4-Difluorobenzene	Benzene	50	101	34-162	10	95	80-120	90	96	66-142	6	21		
	Toluene				10	92	80-120	85	92	59-139	8	21		
	Chlorobenzene				10	96	80-120	85	93	60-133	9	21		



## ABBREVIATIONS

BS/BSD - Blank Spike / Blank Spike Duplicate  
BTEX - Benzene, Toluene, Ethyl Benzene, and Total Xylenes.  
CCR - California Code of Regulations.  
DHS - California Department of Health Services.  
EPA - United States Environmental Protection Agency.  
LCS - Laboratory Control Spike  
LUFT - Leaking Underground Fuel Tank.  
MDL - Method Detection Limit  
NA - Not Applicable.  
NC - Not Calculable  
ND - Not Detected at or above the defined detection limit.  
PQL - Practical Quantitation Limit  
RPD - Relative percent difference.  
STLC - Soluble Threshold Limit Concentration.  
Surr. - Surrogates.  
TCLP - Toxicity Characteristic Leaching Procedure.  
TEH - Total Extractable Petroleum Hydrocarbons.  
Title 26 - Title 26 of the California Code of Regulations (CCR).  
TR~ - Trace, estimated value .  
TTLC - Total Threshold Limit Concentration.  
TVH - Total Volatile Hydrocarbons.  
WET - Waste Extraction Test.

## UNITS

cm <sup>3</sup> - Cubic centimeter	1umhos/cm - uS/cm - Micro Siemens/centimeter
Kg - kilogram.	ppb - Parts per billion.
L - Liter.	ppm - Parts per million.
mg - Milligrams.	ug - Micrograms.
M3 - Cubic meter.	ppbv - Parts per billion per unit volume

KENNEDY/JENKS CONSULTANTS

## **SAMPLE CHAIN-OF-CUSTODY ANALYSIS REQUEST**

## POSSIBLE HAZARDS:

Date	<u>7-15-96</u>	Report To	<u>Jay Knight</u>
Source of Samples	<u>Douglas Aircraft</u>	Company	<u>Kennedy/Jenks Consulting Engineers</u>
Sampler Name	<u>Jay Knight</u>	Address	<u>2151 Michelson Dr., Ste. 100</u>
Phone	<u>714-261-1577</u>	Irvine, CA	<u>92715</u>
Project No.	<u>9544017.01</u>	Phone	

(11) Case ID No.	(11) Client ID No.	(11) Collection Date	(21) Time	(12) Type	(13) Depth	(41) Comp. Pct.	(41) Turn- around
15B	15B - 5'	7/15	0905	S	5		54
	15B - 10'		0907	S	10		
	15B - 15'		0916	S	15		34
	15B - 20'		0933	S	20		34
	15B - 25'		0945	S	25		
	15B - 30'		1007	S	30		
	15B - 35'		1031	S	35		
	15B - 40'		1052	S	40		

11) Write each sentence number in each space.

What's Only One Sample Number In Each Space.

2) Specify type of sample(s): Water (W), Solid (S), or indicate type.

**Mark each sample which should be composted in Laboratory as follows:** Place an "A" in box for each sample that should be composted into one sample; use sequential letter for additional groups.

#### (4) Preservation of sample.

SAMPLE RECEIVED BY:				SAMPLE REINQUISITIONED BY:			
Print Name	Signature	Company	Date	Print Name	Signature	Company	Date
Jay Knight		K/T	7/15	Craig Wilkerson		CIT	7/16/05

- 200 New Stine Rd., #115, Bakersfield, CA 93309
- 530 South 338th St., Federal Way, WA 98003
- 17310 Red Hill Ave., #220, Irvine, CA 92714
- 2191 East Bayshore Rd., #200, Palo Alto, CA 94303

*2/11-11*  
5190 Nail Road, #300, Reno, NV 89502  
3336 Bradshaw Rd., #140, Sacramento, CA 95827  
303 Second St., San Francisco, CA 94107  
1000 Hill Rd., #200, Venture, CA 83003

(6) ANALYSES REQUESTED

<b>Lab Destination</b>	<u>Core Lab</u>
<b>Address</b>	_____
<b>Phone</b>	_____
<b>Carrier/Way Bill No.</b>	_____
<b>Comment/Conditions (Container type, container number etc.)</b>	_____

Signature	Company	Date	Time
<u>John W. Miller</u>	CIT	7/17/86	105